MRC Unit

14th November, 1957

Dr. J.D. Watson,
The Biological Labs.,
Harvard University,
Cambridge 38,
Mass., U.S.A.

Dear Jim,

We have heard from Renato that you have determined the molecular weight of your Coli particles, and also the very exciting news that they are not attacked by RNase. This is really most interesting and we would love to hear a few details. In particular did you do a control to show that the RNase was not inhibited by the particles, and could still digest added naked RNA?

I suspect very strongly that the "globules" that Dick Roberts prepares from Coli (I am sure you must have heard this story) are liquid crystals of microsomal particles, especially as McQuillan, who has repeated the work, has found that on standing the particles grow hedgehogs of spikes, as liquid crystals often do. Have you tried to crystallize your particles? You should have a very good chance of success.

Incidentally now that you have stable homogeneous particles don't forget about X-ray diffraction in solution - you remember that Uli Arndt, who is in Wisconsin, was keen to do this. It occurred to me that one might be able to "stain" the RNA by replacing sodium with caesium. What do you think?

We had Zubay here on Monday. He has found a protein associated with DNA in bacteria. He is also interested in "titrating" RNA in particles. I suggested he might do this on a batch of yours en route to Ieuan Harris.

Everybody here is very busy. Seymour is studying a model of DNA. Sydney and George are hard at work on phage tails. Leslie Barnett and Alice Orgel are learning phage techniques. Mahlon is working full steam with Muriel in the Molteno. Tomorrow John talks about his three-dimensional Fourier of myoglobin. Vernon has just left for the States. The bacterial flagella look very promising.

How are things at Harvard?

F.H.C. Crick